



467114

**KING HIGHWAY LANDFILL
POST-REMEDIATION INSPECTION FORM**
**SOP M - Post-Remediation Inspection
Procedures**

Inspection Date: 6/8/2012 Weather Conditions: Sunny, 70's, light wind Inspector(s): M. Kohagen
 Time Arrived: 8:00 (AM) Time Departed: 12:00 (AM)

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo No.
	Yes	No			
Cover System					
Settlement		X	Strip the soil, place and compact suitable soils within the depression, and replace excavated soil. Once the proper slope is restored, reseed the disturbed area	Suspected settlement in the stressed vegetation area on the north side of the landfill, south of the diversion berm. A plan is being prepared to address possible liner failure, and will be submitted to MDEQ for review and approval by June 30, 2012.	2
Water Ponding	X				
Soil Erosion	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth	Unknown geotextile exposed in the southwest corner of the landfill, adjacent to the sedimentation basin. The location will be inspected to determine whether the geotextile material is a remnant from erosion and sediment control implementation during installation of the final cover system. Additional topsoil will be placed over the geotextile, and the area will be seeded to establish vegetative growth.	1
Slope Movement/Failure	X				
Exposed FML	X				
Undesirable Growth (Rooty Trees or Shrubs)	X				
Protruding Objects	X				
Burrowing Animals		X	Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth	Several burrowing animal holes were observed at the landfill. None of the holes were observed in the final cover system. The holes will be filled and the areas seeded to establish vegetative growth. These areas will be monitored for additional holes generated by the burrowing animals.	3
Cracks	X				
Disturbance or Loss of Vegetation		X	Reseed areas of lost vegetation. Do not allow vegetation (except for grasses) to establish on the cover	An approximate 20' by 20' area of stressed vegetation was observed on the north side of the landfill, south of the diversion berm. Previous soil gas sampling detected elevated methane concentrations within this area. A plan is being prepared to address possible liner failure, and will be submitted to MDEQ for review and approval by June 30, 2012.	2
Sedimentation Basin and Drainage Outlet					
Erosion	X				
Siltation	X				
Debris Buildup	X				

**KING HIGHWAY LANDFILL
POST-REMEDIATION INSPECTION FORM**

**SOP M - Post-Remediation Inspection
Procedures**

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo No.
	Yes	No			
Condition of Discharge Structures & Inlets	X				
Inappropriate Vegetation	X				
Ditches and Diversion Berms					
Siltation		X	Remove excessive sediment buildup	No standing water was observed during the inspection in the low area in the ditch immediately south of the gravel access road on the north side of the landfill; however, ponding water was previously observed. The ditch will be regraded during the work activities to address the stressed vegetation areas on the final cover system.	
Debris Buildup	X				
Disturbed Vegetation		X	Reseed areas of lost vegetation	An area of stressed vegetation was observed east of the sedimentation basin, outside the extent of the final cover system. Previous soil gas sampling within this area detected elevated methane concentrations. However, elevated methane concentrations were not detected during monitoring of the gas vents and probes located to the south and west of this area. Additional topsoil will be placed and the area reseeded in the fall to establish vegetative growth.	4
Erosion	X				
Culverts					
Siltation	X				
Clogging	X				
Riprap, Sheet pile Wall, and Erosion Control Blankets					
Instability or Damage	X				
Sheet pile Wall					
Soil Erosion, Subsidence, or Cracking Behind Wall	X				
Wall Joints	X				
Overall Wall Stability	X				
Surface Water and Pore Water Collection System					
Clogging of Outlets		X	Remove any debris or obstructions/blockages obstructing flow through the pipe	The north pore water outlet pipe was observed to be blocked by a root structure. The root structure was removed from the end of the pipe and riprap replaced around the outlet pipe to reduce the potential for future clogging. The southern pore water outlet pipe was not located. As-built survey data of the southern pore water outlet pipe is available, and the pipe will be located with Terra Contracting when survey equipment is available. If the south pore water outlet pipe is found to be blocked, the blockage will be removed.	5

**KING HIGHWAY LANDFILL
POST-REMEDIATION INSPECTION FORM**

**SOP M - Post-Remediation Inspection
Procedures**

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo No.
	Yes	No			
Evidence of Settlement/ Exposed Materials	X				
Condition of Inlet/Outlets		X	Replace or repair pipes that have been damaged such that flow is obstructed	At the time of inspection, the north pore water outlet was plugged by a large root structure. The root structure was removed and the initial purge of water from the outlet was tinted red. The water turned clear within approximately 5 minutes of removing the obstruction. The discharge from the north pore water outlet is now free flowing. The condition of the south pore water outlet pipe will be evaluated when the pipe is located.	5
Landfill Gas Management System					
Condition of Exterior Vent Pipe Components	X				
Condition of Exterior Gas Probe Components	X				
Evidence of Differential Settlement ¹	X				
Operation of Wind Turbine Ventilators	X				
Groundwater Monitoring System					
Condition of Surface Seal and Pipe Boot	X				
Condition of Protective Casing	X				
Condition of Cap	X				
Condition of Locks	X				
Integrity of Exterior Well Components		X	Replace broken/damaged monitoring wells	Flush mount well MW-5 well cover needs new bolts. New bolts will be installed on the well cover before July 1, 2012.	
Site Access Roads					
Condition of Roadways	X				
Conditions of Access Gates	X				
Security Systems					
Condition of Fencing		X	Replace or repair damaged fencing. Removed trees or branches that have fallen onto fencing. Clear vegetation away from fencing. Reattach mesh fencing that has pulled away from the top rail	Barbwire fence was observed to be missing from an approximate 20 foot section of the perimeter fence in the northwest corner of the landfill. The barbed wire was removed during work associated the City sanitary project. The fence will be repaired and a gate installed once the City sanitary project is completed in 2012.	

**KING HIGHWAY LANDFILL
POST-REMEDIATION INSPECTION FORM**

**SOP M - Post-Remediation Inspection
Procedures**

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo No.
	Yes	No			
Condition of Signs	X				
Condition of Locks	X				

Notes:

1. Evidence of differential settlement includes heaving around vent pipes and/or gas monitoring probes, leaning vent pipes and/or gas monitoring probes, and underground components of vent pipes and/or gas probes exposed above ground surface.
2. The locations where the inspection item photos were taken are provided on the attached figure.

Additional Remarks:

Several areas of stressed vegetation were observed on the cover system in addition to the original stressed vegetation area identified south of the diversion berm. Soil gas sampling was conducted within these other areas of stressed vegetation. No methane was detected within any of these other areas of stressed vegetation. The stressed vegetation is likely due to the very dry conditions at the landfill. These other areas of stressed vegetation will be addressed in the forthcoming work plan to be submitted to MDEQ by June 30, 2012. In addition, the purge water generated from recent groundwater sampling activities was treated and discharged to ground. Drew Santini (CDM Smith) was present for a portion of the landfill inspection.



Photo No. 1: Exposed geotextile located at the southwest corner of the landfill, adjacent to the sedimentation basin.



Photo No. 2: Area of stressed vegetation and possible settlement on the north side of the landfill, south of the diversion berm.



Photo No. 3: Location of observed animal hole adjacent to sedimentation basin outlet structure.



Photo No. 4: Area of stressed vegetation located outside the final cover system, east of the sedimentation basin.



Photo No. 5: North pore water discharge pipe outlet.

**KING HIGHWAY LANDFILL
POST-REMEDIATION INSPECTION PHOTO LOCATION FIGURE**

**SOP M - Post-Remediation Inspection
Procedures**

